

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF MICHIGAN
SOUTHERN DIVISION**

Walters et al. v. City of Flint et al.

Case No. 5:16-cv-10164-JEL-MKM
Honorable Judith E. Levy

**PLAINTIFFS' RESPONSE
TO VNA'S MOTION TO EXCLUDE THE
TESTIMONY AND REPORTS OF DR. WILLIAM BITHONEY**

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INTRODUCTION

Bellwether Plaintiffs [REDACTED] (collectively, “Plaintiffs”) were injured because of their exposure to Flint’s contaminated drinking water during the Flint Water Crisis. They were lead poisoned and will suffer lifelong and life-altering effects because of it. Plaintiffs’ expert, Dr. Krishnan, a neuropsychologist, has evaluated [REDACTED] and formed the opinion that each suffers some degree of cognitive or psychological deficit. And Dr. Crakes, an economist, has calculated the economic impact that such injuries will cause in the future.

As to who is responsible for these injuries, Dr. Bithoney, a pediatrician, has concluded that exposure to lead is the likely cause of the neuropsychological impairments suffered by the children. In forming this opinion, Dr. Bithoney relied on not only his education, training, and four decades of experience, but also on his review of documents and information relative to each child, including each child’s medical records, testimony from their parents, and water sampling data from Flint, Michigan. Dr. Bithoney’s opinions satisfy the requirements of Federal Rule of Evidence 702: He is a medical doctor qualified to testify as an expert in the field of pediatrics, he applied sound methodology in reaching his opinions in this case, and his opinions are relevant to a jury’s determination that VNA’s misconduct caused the Plaintiffs’ lifelong injuries.

VNA North America, LLC, VNA North America, Inc., and VNA Water North America Operating Services, LLC (“VNA”) moves to exclude Dr. Bithoney under Federal Rule of Evidence 702 and *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579 (1993). To hear VNA tell it, Dr. Bithoney’s opinions and diagnoses are unreliable and must be excluded because they are speculative, or because he failed to conduct a sufficient exposure assessment. To this end, VNA disagrees that a medical doctor with more than 40 years of experience specializing in the diagnosis and treatment of lead poisoned children can make reliable diagnoses based on inferences from available evidence like results of bone lead testing, particularly taken in conjunction with interviews with parents and a knowledge of the background events.

However, well-established Sixth Circuit precedent makes clear that an expert may draw inferences based on test results and that an opposing party’s disagreement with the expert merely raises questions of weight and credibility that are for the jury to determine. *See Jahn v. Equine Servs., PSC*, 233 F.3d 382, 391–92 (6th Cir. 2000). As set forth below, not only could Dr. Bithoney make a reliable diagnosis based on commonsense inferences drawn from reliable bone lead data, but he also conducts a reliable and sufficient assessment of their exposure during that time. VNA’s unreasonable demands for greater precision or certainty cannot justify exclusion, nor can their minor disagreements with him about certain facts. *See In re Scrap Metal*

Antitrust Litig., 527 F.3d 517, 530 (6th Cir. 2008); *McLean v. 988011 Ontario, Ltd.*, 224 F.3d 797, 801 (6th Cir. 2000).

VNA also makes several attempts to recast Dr. Bithoney’s testimony as the kind of inadmissible “any exposure” testimony that is sometimes excluded by courts. But this attack on Dr. Bithoney’s testimony does not take his reports, his deposition testimony, or the case law on this point seriously. The reason is straightforward: An expert *can surely* communicate scientific and public health facts to the jury—that there is no safe level of lead exposure for children and that the effects of lead exposure tend to be cumulative, for example. The case law VNA hangs its hat on excludes expert testimony when the expert stops there and concludes solely that “any exposure” is perforce the cause of a plaintiff’s injuries. *See, e.g., Comardelle v. Pa. Gen. Ins. Co.*, 76 F. Supp. 3d 628, 633–34 (E.D. La. 2015); *Anderson v. Ford Motor Co.*, 950 F. Supp. 2d 1217, 1224–25 (D. Utah 2013).

But the cases VNA cites do not prohibit the expert from developing those facts for the jury *at all*. After all, *Daubert* and its progeny flexibly admit expert opinions and their bases—and readily contemplate that some opinions may require instructions to the jury by the court, or requirements that the expert the information in a way that avoids confusion or prejudice. *See Daubert*, 509 U.S. at 596; *United States v. Gissantaner*, 990 F.3d 457, 990 (6th Cir. 2021). And, emphatically, Dr. Bithoney is not offering an “any exposure” opinion based solely on the observation

that there is “no safe level” of lead exposure for children. Rather, it is a mere starting point for analyzing Plaintiffs’ exposures to lead. *Carroll v. John Crane, Inc.*, Case No. 15-cv-373, 2017 U.S. Dist. LEXIS 105556, at *33 (W.D. Wisc. July 17, 2017).

VNA’s final theory for exclusion—that Dr. Bithoney’s opinions do not “fit” Plaintiffs’ “theory of liability with respect to VNA” because VNA was not formally engaged by the City of Flint until February 2015—noticeably overlooks the opinion of Richard Humann, Plaintiffs’ standard of care expert. As VNA is well aware, Mr. Humann opines that it had a duty to take action in 2014 when it was consulting for the Detroit Water and Sewerage Department (“DWSD”). Of course, fitting the “theory of liability” isn’t the standard under Rule 702—fitting the facts of the case is. While VNA’s “fit” challenge should fail for that reason alone, it is abundantly clear that Dr. Bithoney’s opinions fit the facts of this case, including Plaintiffs’ 2015 exposures to lead in Flint’s water.

Accordingly, the Court should deny VNA’s motion in its entirety.

BACKGROUND

I. Dr. Bithoney is uniquely and undeniably qualified.

Dr. William Bithoney is a graduate of Harvard College and the Yale University School of Medicine. Ex. 1, Bithoney CV. He is board certified in pediatrics and is licensed to practice medicine in several states. Throughout his career, he has worked at many of the nation’s most prestigious hospitals, including

Children’s Hospital in Boston, Brigham and Women’s Hospital in Boston, Mercy Hospital of Philadelphia, and Grady Memorial Hospital in Atlanta. Additionally, Dr. Bithoney has held various academic appointments at the Harvard School of Medicine, New York College of Osteopathic Medicine, and New York Medical College. He has also served as a consultant for the U.S. Centers for Disease Control and Prevention (CDC). Dr. Bithoney has been recognized by his peers on numerous occasions and has served on national (and regional) committees regarding pediatric care. He has contributed to the medical literature and maintains editorial responsibilities for many well-regarded journals. As relevant to this case, one of Dr. Bithoney’s areas of interest and research is lead poisoning and failure to thrive.

All in all, he has been practicing medicine for more than 40 years. Ex. 2, Bithoney Dep., at 15:19–24. He has dedicated his career to studying, diagnosing, and treating lead poisoning in children. *See id.* at 5:19–24. At one point, 32% of all the children in Boston were under his organization’s care. *Id.* at 49:7–10. In 1999, he was appointed Physician in Chief of St. Joseph’s Children’s Hospital in Patterson, New Jersey, “which is a community very similar to Flint.” *Id.* at 51:8–12.

II. Lead causes lead poisoning, and there is no safe level in children.

Dr. Bithoney, in his reports, states in no uncertain terms that there is “no safe lead level” for children. *See* Ex. 3, Bithoney Report [REDACTED], at 9; Ex. 4, Bithoney Report [REDACTED], at 10; Ex. 5, Bithoney Report [REDACTED], at 9; Ex. 6, Bithoney Report [REDACTED], at 9.

██████, at 9.¹ Dr. Bithoney bases this conclusion on research performed by the Center for Disease Control (CDC), the United States Preventive Services Task Force (USPSTF), The National Institute of Health (NIH) as well as several peer-reviewed academic papers. *See* Ex. 3, Bithoney Report ██████, at 9–10.

Dr. Bithoney relies upon CDC research that indicates lead poisoning leads to higher rates of “cognitive damage” in children and that “[a]ny level of lead in a child is toxic.” *See id.* at 9. Dr. Bithoney further relies upon NIH studies that show lead negatively affects a child’s “health and cognition” which manifests as “(1) decreased academic achievement; (2) IQ decreases; (3) specific cognitive measure declines; and (4) increased incidence of problems of attention related behavior.” *Id.* at 10. In addition to the aforementioned effects on a child’s health and cognition, the NIH has identified “multiple chronic medical conditions including decreased kidney function, hypertension, cardiac disease and essential (neurologic) tremor” that occur at higher rates in individuals exposed to lead as children. *Id.* at 10.

Dr. Bithoney, in forming his conclusions, also relies upon numerous peer-reviewed scientific papers. In connection with negative health outcomes as a result of childhood exposure to lead, Dr. Bithoney acknowledges a study that found the risk of death from a stroke increased significantly in individuals who had been

¹ All four of Dr. Bithoney’s reports are substantially similar, and therefore Plaintiffs will cite only to Dr. Bithoney’s report on D.W. for the sake of readability and will cite his reports for the other Plaintiffs only as necessary.

exposed to lead as children. *See id.* Dr. Bithoney relies upon another study wherein researchers found “neural developmental and cognitive declines” as well as “significant behavioral problems” in children that had “elevated albeit ‘low’” lead levels. *Id.* at 10. Indeed, Dr. Bithoney acknowledges that research shows that any amount of lead in children, even low concentrations, can cause “cognitive impairments” and “neurodevelopmental toxicity.” *Id.* at 10–11. He further bases his conclusions on an NIH report indicating that hundreds of thousands of cases of ADHD are attributable to elevated lead levels in children. *See id.* at 11–12.

Dr. Bithoney concludes that each of the four Plaintiffs was exposed to lead when the City of Flint switched its water source from the Detroit River to the Flint River in 2014. *See id.* at 12. He also found that the four children were already suffering negative outcomes in connections with their exposure to lead. *Id.* However, Dr. Bithoney acknowledges that the worst is yet to come because of the “lag effect.” *Id.* He explains that the “lag effect” is present in “children who are lead intoxicated [and] do well in early childhood but then fall behind.” *Id.* Dr. Bithoney identified that each of the four Plaintiffs will likely “‘grow into’ deficits as they fail to acquire age expected skills.” *See id.* He further opines that “childhood brain injury severity is not clear until brain maturation is achieved in early adulthood.” *See id.* at 12.

Dr. Bithoney recognizes that it is challenging to evaluate executive functioning in a younger child” who had been exposed to lead because “executive

functioning skills do not develop until later in childhood.” *Id.* Dr. Bithoney concludes that “it is more likely than not that the children exposed to elevated lead levels in the water in Flint will not show the full negative developmental impact on their cognition for at least several years.” *See id.* at 13. Dr. Bithoney further opines that Plaintiffs, due to their exposure to lead in Flint’s water have a “higher likelihood of experiencing several medical illnesses . . . includ[ing] cardiovascular disease, hypertension, renal disease, and neurological defects such as essential tremor.” *Id.*

III. Dr. Bithoney diagnosed each Plaintiff with lead poisoning.

Dr. Bithoney prepared his reports on each of the bellwether Plaintiffs by examining complete medical and academic histories, plaintiff fact sheets, bone scans, blood lead level tests, and transcripts of the deposition of the Plaintiffs’ parents. *See* Ex. 6, Bithoney Report (██████), at 1; Ex. 3, Bithoney Report (██████) at 1; *See* Ex. 4, Bithoney Report (██████), at 1; Ex. 5, Bithoney Report (██████) at 1. Additionally, Dr. Bithoney separately interviewed Plaintiffs’ parents. *Id.* However, Dr. Bithoney did not exclusively rely upon records specifically describing each Plaintiff; he also relied on extensive scientific literature and years of professional experience. *See supra* at 4–5.

In examining the Plaintiffs’ blood lead level test results, he opined that for each Plaintiff that their actual lead levels were likely quite a bit higher than the blood tests indicated. This is because “any given day of the month there is at best only an

approximately 3% chance that a blood Pb level drawn on that day represents the peak Pb level even for that month alone, let alone the peak level for previous months.” *See, e.g.*, Ex. 3, Bithoney Report [REDACTED], at 9. Unless there is consistent exposure, blood lead levels constantly decrease as the lead moves into a child’s soft tissues or bones. *Id.*

During his investigation, Dr. Bithoney found that the children were drinking between three and six glasses of tap water per day which he opines “represents a significant source of potential Pb intoxication.” *Id.* at 6. “A child who ingests 1 liter of water per day (roughly the equivalent of four, 8-ounce glasses per day) with a Pb concentration of 10 ppb will therefore ingest 10 mcg of Pb per day.” *Id.*

Dr. Bithoney also opined that each of the Plaintiffs “will not show the full deleterious developmental impact of . . . lead exposure for at least several years” due to the “lag effect.” *See, e.g.*, Ex. 3, Bithoney Report [REDACTED] at 13. He explained the lag effect at his deposition: “It’s very typical not only in the literature but also in my own experience that . . . children who are lead poisoned may easily learn to read, but when they . . . reach the 5th grade, they’ll have trouble reading to learn, to understand the words that they’re reading, that kind of lag effect.” Ex. 2, Bithoney Dep. at 439:18–24. Dr. Bithoney indicated that “executive functioning deficits,” which are caused by lead, do not present until a child is older. *Id.* at 440:1–11.

² When Dr. Bithoney uses A.T.'s bone lead level to estimate how much lead she has been exposed to, it goes without saying that the same simple calculation

was chronic and that was masked by ongoing deposition of lead into the soft tissues and into the bones.” *Id.* at 87:4–7. Dr. Bithoney emphatically testifies that “you can’t argue with the fact that tens of thousands of micrograms of lead are in this child’s bones.” *Id.* at 87:19–21.

Dr. Bithoney bases his conclusions, in part, on the fact that [REDACTED] [REDACTED]

[REDACTED]

[REDACTED] *Id.* Dr. Bithoney further concluded that [REDACTED] as diagnosed by Dr. Krishnan was caused by this prolonged exposure to elevated lead levels. *Id.* at 6. Dr. Bithoney concludes that [REDACTED] ingestion of Flint River water is a significant cause and exacerbating factor resulting in [REDACTED]

[REDACTED]. *Id.* at 11–12.

[REDACTED]

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IV. Dr. Bithoney reliably excluded other potential causes of Plaintiffs' lead poisoning.

Dr. Bithoney ruled out all alternative lead sources to which Plaintiffs could have been exposed, leaving only Flint's tap water. *See* Ex. 2, Bithoney Dep., at 204:6–12, 207:3–208:8, 220:13–221:10, 397:13–19. He ruled out lead paint, dust, and soil. *See Id.* at 236:1–7. Noting that there was [REDACTED] Dr. Bithoney explained “I have no reason to suspect there's any other cause of this”—adding, “I have no proof that there's another cause for this”—and so it was “it was the lead from the water.” *Id.* at 397:13–19. After all, there were no “other sources of lead intoxication.” *Id.* at 221:6–10. And there was “no other reason, no other cause . . . other than lead in the water.” *Id.* at 208:7–8.

[REDACTED] Dr. Bithoney specifically asked the Plaintiff's parents about “environmental conditions” such as “peeling paint” and “leaded dust” and was able to rule out those exposures as the cause the Plaintiff's elevated blood lead levels. *Id.* at 207:3–5; 212:13–18. In his thorough interviews with each Plaintiff's parents, Dr.

Bithoney was unable to find any evidence that the Plaintiffs were exposed to lead through lead paint, lead dust, soil, or any cause other than the contaminated water. *Id.* at 236:1–7. He also examined “family history,” considering potential illnesses among “siblings,” “parents,” and “grandparents.” *See id.* at 220:23–221:2.

Dr. Bithoney also noted a sudden and substantial increase in the number of Flint children who required developmental intervention and special education, which further led him to conclude that Flint’s water the source of Plaintiffs’ injuries. *See* Ex. 2, Bithoney Dep., at 99:9–13 (“[A]ll of the sudden there was a huge spike in the number of kids who needed developmental intervention and special education, 400% spike and a 700% increase in those require having elevated umbilical cord blood.”). He reiterated that these increases were a “canary in the coal mine,” because “that there’s a 400% increase in the number of children or the percentage of children that need special education in Flint subsequent to the exposure and also the 700% increase in umbilical cord blood abnormalities in children in umbilical cord blood abnormalities in children in Flint versus Detroit.” *Id.* at 120:5–11.

Those facts were “quite dramatic.” *See id.* at 97:20–22. After all, as he put it later: “[T]here’s not any other community in the United States that I am aware of where there is an immediate and sudden increase in the need for special education.” *Id.* at 208:3–6. In short, he explained that “[i]t’s my judgment as a fairly highly experienced clinician, I’ve probably seen more cases than most doctors you’ll ever

encounter, that that is due to the ingestion of water from the Flint River and that's all associated with the developmental delays and increased umbilical cord levels that we're seeing across the board." *Id.* at 172:5–12.

LEGAL STANDARD

Federal Rule of Evidence 702 governs the admissibility of expert testimony in federal courts. *Daubert*, 509 U.S. at 588. Under Rule 702, "a proposed expert's opinion is admissible, at the discretion of the trial court, if the opinion satisfies three requirements." *In re Scrap Metal Antitrust Litig.*, 527 F.3d at 528–29. "First, the witness must be qualified by 'knowledge, skill, experience, training, or education.' Second, the testimony must be relevant, meaning that it 'will assist the trier of fact to understand the evidence or to determine a fact in issue.' Third, the testimony must be reliable." *Id.* at 529 (quoting Fed. R. Evid. 702).

The "overarching goal" is "assessing the 'scientific validity and thus the evidentiary relevance and reliability' of the principles and methodology underlying the proposed expert testimony." *United States v. Langan*, 263 F.3d 613, 621 (6th Cir. 2001) (quoting *Daubert*, 509 U.S. at 594–95). "Four inquiries guide the reliability analysis: Is the technique testable? Has it been subjected to peer review? What is the error rate and are there standards for lowering it? Is the technique generally accepted in the relevant scientific community?" *Gissantaner*, 990 F.3d at 463.

The inquiry isn't a "definitive checklist or test." *Daubert*, 509 U.S. at 593. Rather, it is inherently a "flexible one," *Nelson v. Tennessee Gas Pipeline Co.*, 243 F.3d 244, 251 (6th Cir. 2001) (quoting *Daubert*, 509 U.S. at 594), and must of course "be 'tied to the facts' of a particular 'case.'" *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 150 (1999) (quoting *Daubert*, 509 U.S. at 591). It is unsurprising that "no single factor [above] disposes of a reliability inquiry." *Ruiz-Troche v. Pepsi Cola of P.R. Bottling Co.*, 161 F.3d 77, 85 (1st Cir. 1998). Furthermore, the factors are not exhaustive; the Court can consider whether "expert testimony [was] prepared solely for purposes of litigation, as opposed to testimony flowing naturally from an expert's line of scientific research or technical work." *Johnson v. Manitowoc Boom Trucks, Inc.*, 484 F.3d 426, 434 (6th Cir. 2007).

Throughout this analysis, a district court exercises a "gatekeeping responsibility" as a part of this inquiry. *Daubert*, 509 U.S. at 597. But this gatekeeping function is not intended to displace the jury or the adversarial system: "Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence." *Id.* at 596.

Importantly, the Federal Rules Advisory Committee explicitly recognized that "[w]hen facts are in dispute, experts sometimes reach different conclusions based on competing versions of the facts. The emphasis in the amendment on 'sufficient

facts or data’ is not intended to authorize a trial court to exclude an expert’s testimony on the ground that the court believes one version of the facts and not the other.’” *Gonzalez Prod. Sys. v. Martinrea Int’l Inc.*, Case No. 13-cv-11544, 2015 U.S. Dist. LEXIS 106480, at *25 (E.D. Mich. Aug. 13, 2015) (quoting Fed. R. Evid. 702 Advisory Committee Notes, 2000 amends.). Consequently, “[w]hen, as here, the parties’ experts rely on conflicting sets of facts, it is not the role of the trial court to evaluate the correctness of facts underlying one expert’s testimony.” *Micro Chem., Inc. v. Lextron, Inc.*, 317 F.3d 1387, 1392 (Fed. Cir. 2003). “The fact-finder is entitled to hear [an expert’s] testimony and decide whether it should accept or reject that testimony after considering all factors that weigh on credibility, including whether the predicate facts on which [the expert] relied are accurate.” *Pipitone v. Biomatrix, Inc.*, 288 F.3d 239, 250 (5th Cir. 2002). Ultimately, “[a] review of the caselaw after *Daubert* shows that the rejection of expert testimony is the exception rather than the rule.” *In re Scrap Metal Antitrust Litig.*, 527 F.3d at 530.

ARGUMENT

VNA advances several arguments in its attempt to bar Dr. Bithoney at trial: First, VNA claims he lacks a sufficient scientific basis to conclude that lead exposure causes the injuries suffered by Plaintiffs; second, VNA argues his opinion that Plaintiffs were exposed to sufficient lead levels is unreliable; third, VNA suggests Dr. Bithoney did not properly rule out other possible causes of Plaintiffs’ injuries;

fourth, VNA complains some of his opinions are irrelevant and/or speculative; and fifth, VNA posits that his opinions do not “fit” the facts of this case. Each contention is without merit, and VNA’s motion should be denied in its entirety.

I. Dr. Bithoney’s general causation opinions are reliable.

VNA claims Dr. Bithoney’s general causation opinions, *i.e.*, his opinion that lead exposure, generally, is capable of causing the kinds of injuries suffered by the children, are unreliable. In support, VNA claims Dr. Bithoney’s opinions are based on “no scientific evidence.” *See* VNA Brief at 10. But just a paragraph later, VNA reveals its real complaint: None of the studies Dr. Bithoney cites had the specific goal of examining the causal relationship between lead exposure and the specific diagnosis of neurocognitive disorder and/or mood disorder. Put another way, VNA does not think it is enough that for Dr. Bithoney to rely on the *data* contained in a scientific, peer-reviewed source; in its view, the *goal* of the study must also be the very question his testimony seeks to answer in order to be reliable and admissible under *Daubert*. Tellingly, VNA offers no legal citation for this standard.

Similarly, VNA seeks to explain away the children’s symptoms and the frequency with which these conditions are observed in individuals with lead exposure by suggesting that Dr. Bithoney merely “overstates the adverse effects associated with lead exposure.” VNA Br. at 12. But again, *disagreeing* with how Dr. Bithoney interprets the data is not a legitimate basis for exclusion. Fed. R. Evid.

702 advisory committee’s note, 2000 amendment. And the fact that VNA interprets the available medical literature one way and Dr. Bithoney another directly undermines its claim that he has formed opinions based on “no scientific evidence.”

VNA cites several studies that they believe contradict Dr. Bithoney’s conclusions as definitive proof that Dr. Bithoney’s conclusions are unreliable. But while studies that contradict his conclusions may exist, he should still be permitted to testify because his conclusions are “objective,” “rational”, and “based on sound and trustworthy scientific literature.” *See Figurski v. Trinity Health-Michigan*, 2016 Mich. App. LEXIS 1451, at *34–35 (2016). At trial, VNA has every right to cross-examine Dr. Bithoney and to present what they perceive as contradictory evidence. *Daubert*, 509 U.S. at 596. However, VNA’s discovery of so-called “contrary studies” does not require the exclusion of Dr. Bithoney’s testimony.

Likewise, VNA focuses on the *number* of studies that support Dr. Bithoney’s conclusions in this case, suggesting that two or three or four studies is not enough. Yet again, VNA provides no citation for its specious standard. The reason for such an omission is obvious, since both the Federal Rules and Supreme Court precedent make clear that a *Daubert* inquiry is “flexible.” *Id.* at 594.

Finally, VNA criticizes Dr. Bithoney’s interpretation of the medical literature and notes that he disagrees on a particular issue with one of Plaintiffs’ other experts. Neither is a legitimate basis for exclusion. It is well-established that an expert can

rely on a study without wholesale adopting or agreeing with its conclusions. *See, e.g., In re Heparin Prods. Liab. Litig.*, 803 F. Supp. 2d 712, 733 (N.D. Ohio 2011) (expert, who was familiar with studies contrary to her opinion, nevertheless permitted to testify). This is, in fact, common in toxic tort litigation, where experts rely on data from published studies, but often disagree as to the appropriate interpretation of the data or importance of various factors in bringing about a particular outcome. *See, e.g., Knight v. Boehringer Ingelheim Pharms., Inc.*, 323 F. Supp. 3d 837, 849–50 (S.D. W. Va. 2018) (expert testimony admissible where expert relied on portions of studies but disagreed with certain ultimate conclusions); *Mahaney v. Novartis Pharms. Corp.*, Case No. 1:06-CV-00035-R, 2011 U.S. Dist. LEXIS 156848, at *32 (W.D. Ky. Sept. 12, 2011) (expert partially relied on multiple studies in forming his opinions). To suggest, as VNA does, that experts can only parrot medical literature to testify at trial, is fundamentally untrue.

In sum, Dr. Bithoney's general causation opinions are based on his review and interpretation of the relevant peer-reviewed scientific literature and VNA has presented no legitimate basis for limiting or barring Dr. Bithoney from offering general causation opinions at trial.

II. Dr. Bithoney's specific causation opinions are reliable.

VNA criticizes Dr. Bithoney for crediting testimony of the children's parents that the water in Flint was malodorous, discolored, and that at-home water kits

indicated it was unfit to drink. Each, VNA claims, is not conclusive evidence that the water was contaminated. While VNA may be correct that none of these data points *individually* proves that the water was contaminated, all—especially when taken together—make it more likely that it was. Moreover, and perhaps more importantly, the record is replete with evidence of the widespread contamination of the Flint water supply. To suggest that Dr. Bithoney merely employed a take-my-word-for-it methodology in answering the threshold question of whether the water was contaminated is patently untrue and not borne out by the actual facts in this case.

The *Daubert* Court was quick to point out that “there are no certainties in science,” and Dr. Bithoney is not required to prove beyond all doubt that the Flint water was contaminated. Based on all the available data points he has concluded it likely was contaminated and neither *Daubert* nor the Federal Rules require more.

A. Dr. Bithoney’s specific-causation opinions are based on a reliable methodology.

A “plaintiff must show that he was exposed to the toxic substance and that the level of exposure was sufficient to induce the complained-of medical condition (commonly called a ‘dose-response relationship’).” *Pluck v. BP Oil Pipeline Co.*, 640 F.3d 671, 677 (6th Cir. 2011) (quotation omitted)). Dr. Bithoney’s testimony meets this standard is based on a reliable methodology.

1. Dr. Bithoney may opine Plaintiffs were exposed to toxic lead in their drinking water.

Dr. Bithoney’s opinion that Plaintiffs were exposed to toxic lead in their drinking water is based on a reliable methodology. It is supported by ample evidence in the record, including blood tests and bone scans, statements from Plaintiffs’ parents who observed and tested the discolored, foul-smelling water, water sampling studies, and numerous statements from public officials. While VNA may claim that the supposed “lack of reliable information about the concentrations of lead in Plaintiffs’ drinking water makes it impossible” for Dr. Bithoney to render his opinions, the Sixth Circuit has held that juries may consider expert opinions, even in cases where information may be scarce. *See Jahn*, 233 F.3d at 390 (permitting expert veterinarian to “piece together what probably happened” to an animal).

Experts need not limit their testimony to “what is known to a certainty,” but need only state an “inference or assertion . . . derived by the scientific method.” *Id.* at 388. “*Daubert* and Rule 702 require only that the expert testimony be derived from inferences based on a scientific method and that those inferences be derived from the facts of the case at hand, not that [the expert] know answers to all the questions a case presents—even to fundamental questions.” *Id.* at 390. If an expert relies on their “lengthy experience” and their opinion has “some factual basis,” *L.E. Cooke Co.*, 991 F.2d at 342, and is not “pull[ed] . . . from thin air,” *see Jahn*, 233 F.3d at 391; *accord In re Scrap Metal Antitrust Litig.*, 527 F.3d at 531, then the Court

should permit the expert to testify and leave credibility assessments for the jury. Expert witnesses “need not be purveyors of ultimate truth in order to be allowed on the stand.” *Jahn*, 233 F.3d at 393.

In *Jahn*, a plaintiff horse owner brought negligence claims against an equine hospital following her horse’s death in surgery. *Id.* at 385. Unfortunately, the defendant’s record keeping was inadequate to provide a complete picture of the circumstances surrounding the horse’s death. *Id.* at 392. The court held that while a lack of medical records introduced uncertainty, a veterinarian could nevertheless opine as to what he “believed to be the probable cause of [a horse’s] demise” because the expert testimony “assist[ed] the trier of fact to understand the evidence or to determine” why the animal died. *Id.* at 390.

Here, Dr. Bithoney opined that the Plaintiffs were exposed to toxic lead when they consumed contaminated water in their homes. This opinion is based on ample evidence in the record. For example, he interviewed each of the Plaintiffs’ parents, who confirmed that their children were drinking between three and six glasses of tap water each day. *See* Ex. 4, Bithoney Report [REDACTED] at 3. Plaintiffs’ parents also reported that the water in their homes in 2014 and 2015 “was malodorous and discolored.” Ex. 4, Bithoney Report [REDACTED] at 4. Furthermore, [REDACTED] mother reported to Dr. Bithoney that she used a home lead test kit to determine whether her drinking water contained lead. *Id.* at 3. After completion of the test, the indicator “turned red,”

which meant that the water was “positive for Pb in all water sources tested, including the kitchen, bathroom sink and bathroom tub.” *Id.* at 3; Ex. 2, Bithoney Dep. 121:14–123:6. Dr. Bithoney performs a calculation using the [REDACTED] bone scan results, using a two-year half-life and extrapolating backwards to conclude that [REDACTED] would have four times the amount of lead in his bones as he did when the bone scan was performed. Ex. 2, Bithoney Dep. at 386:8–387:16.

VNA disputes the validity of this at-home test and argues that since Dr. Bithoney did not review the results himself, he may not rely on it. VNA Br. at 19–20. However, the Sixth Circuit does not require that an expert “know” facts to a certainty for testimony to be admissible, or that an expert independently verify the evidence he reviews. *Jahn*, 233 F.3d at 388, 390. Indeed, “[e]xperts are permitted a wide latitude in their opinions, including those not based on firsthand knowledge, so long as ‘the expert’s opinion [has] a reliable basis in the knowledge and experience of the discipline.’” *See id.* at 388 (permitting medical expert to base his opinion on indica of an infection documented in the record without independent verification); *MACTEC, Inc. v. Bechtel Jacobs Co., LLC*, 346 F. App’x 59, 78 (6th Cir. 2009) (permitting an expert to rely on inadmissible and unverified hearsay). More importantly, this evidence is merely one piece of the puzzle, which when viewed as a whole, allowed Dr. Bithoney to reasonably infer that the Plaintiffs consumed drinking water contaminated with lead.

Dr. Bithoney also noted a sudden and substantial increase in the number of Flint children who required developmental intervention and special education, which further led him to conclude that Flint's water the source of Plaintiffs' injuries. *See* Ex. 2, Bithoney Dep., at 99:9–13 (“[A]ll of the sudden there was a huge spike in the number of kids who needed developmental intervention and special education, 400% spike and a 700% increase in those require having elevated umbilical cord blood.”). These community-wide increases were a “canary in the coal mine,” because “that there’s a 400% increase in the number of children or the percentage of children that need special education in Flint subsequent to the exposure and also the 700% increase in umbilical cord blood abnormalities in children in umbilical cord blood abnormalities in children in Flint versus Detroit.” *Id.* at 120:5–11.

Those facts were “quite dramatic.” *See id.* at 97:20–22. As he put it later: “[T]here’s not any other community in the United States that I am aware of where there is an immediate and sudden increase in the need for special education.” *Id.* at 208:3–6. He explained that “[i]t’s my judgment as a fairly highly experienced clinician, I’ve probably seen more cases than most doctors you’ll ever encounter, that that is due to the ingestion of water from the Flint River and that’s all associated with the developmental delays and increased umbilical cord levels that we’re seeing across the board.” *Id.* at 172:5–12.

In addition, Dr. Bithoney cited a 2015 water sampling study by Virginia Tech University. Ex. 4, Bithoney Report (██████) at 4. This study found that “more than 40% of the water in Flint had Pb levels greater than 5 ppb” and “17% of homes had Pb levels greater than 15 ppb.” *Id.* He also noted Congressman Kildee’s announcement that even as late as 2016, “over 100,000 Flint residents could still no longer drink their tap water.” *Id.* Indeed, the City of Flint instituted a “billion-dollar program to replace the pipes because there was so much lead in the water.” Ex. 2, Bithoney Dep., at 204:18–22.

While VNA cites several cases, including *Nelson*, which hold that population studies are insufficient to support an opinion that a particular individual was exposed to a toxin, VNA ignores the fact that Dr. Bithoney’s opinions are not *solely* based on population studies. *See Nelson*, 243 F. 3d at 252–53 (noting that expert’s opinion based on a population study was not scientifically valid “without any factual basis from which a jury could infer that plaintiffs were in fact exposed.”)

Plaintiffs have undergone blood-lead tests, as well as bone scans, which confirm that they were exposed to high concentrations of lead. Ex. 3, Bithoney Report (██████), at 4–5. The resulting “toxicologic profile” provided additional confirmation to Dr. Bithoney that the exposure was caused by lead contaminated water. Ex. 2, Bithoney Dep., at 205:3–8. It is also important to note, for example,

that in 2016, [REDACTED] school—not Dr. Bithoney—recommended [REDACTED] undergo a blood lead test due to the contaminated water. Ex. 3, Bithoney Report [REDACTED], at 4–5.

VNA’s complaints regarding Plaintiffs’ blood–lead testing are faulty for two reasons. First, courts permit experts to opine that a plaintiff was toxically exposed notwithstanding that objective dose tests “[do] not produce abnormal [or elevated] results.” *Kannankeril v. Terminix Int’l*, 128 F.3d 802, 808–09, 810 (3d Cir. 1997). As the court explained in *Kannankeril*, “[i]t is for the jury to decide whether a single cholinesterase test [which measures exposure to a certain pesticide], yielding results within normal limits, outweighs the other factors relied upon by Dr. Gerson and undermines his opinion. This is an issue of credibility, not of admissibility.” *Id.* at 809. As the Third Circuit summarized in a subsequent decision, “In *Kannenkeril*, we held that even absent hard evidence of the level of exposure to the chemical in question, a medical expert could offer an opinion that the chemical caused plaintiff’s illness.” *Heller v. Shaw Indus., Inc.*, 167 F.3d 146, 157 (3d Cir. 1999). Second, Dr. Specht testified that lead has a half-life in blood of about a week in a child. *See* Ex. 8, Specht Report, at 3. This means that the blood–lead level would have been, just a week earlier, double what the result showed.

2. There is proof of sufficient lead exposure, capable of causing Plaintiffs’ injuries.

Next, VNA argues that even if Dr. Bithoney concludes Plaintiffs were exposed to some lead, Plaintiffs cannot show they were exposed to *enough* lead to

cause their injuries. Initially, it is critical to clarify that unlike other substances that can be toxic at higher levels, but inert at low levels, lead is unsafe, even at low levels.

VNA seeks to amplify the fact that Plaintiffs' homes contained copper, rather than lead pipes. To VNA, this undercuts his opinions that Plaintiffs were exposed to enough lead to cause harm—again, a point which VNA is free to raise on cross-examination. But Dr. Bithoney does not need to convince VNA to testify at trial. He need only provide a reasonable basis for his conclusions. *See In re Scrap Metal Antitrust Litig.*, 527 F.3d at 527 (expert provided reasoned explanations for the assumptions that he made and was permitted to testify). There is ample evidence to conclude both that even low lead levels can cause harm and that Flint's water system was contaminated with lead during the time that Plaintiffs were exposed to the water.

Curiously, VNA also suggests that Dr. Bithoney cannot rely on the parent's testimony for evidence of other significant lead exposure. As an initial matter, only the jury is empowered to credit and discredit evidence; the fact that VNA does not believe the parents or is unpersuaded by their testimony regarding other potential lead exposures, does not change the fact that this evidence *exists* in the record. And Dr. Bithoney is permitted to rely on the parents' testimony.

Moreover, VNA's suggestion that only an independent investigation satisfies *Daubert*, is flawed. Indeed, pharmaceutical litigations are instructive in this context; an expert need not perform their own clinical trial to offer reliable opinions at trial.

To suggest that Dr. Bithoney must test Plaintiffs' homes and schools, and undertake a massive investigation to provide competent, reliable testimony is untrue.

3. Dr. Bithoney may rely upon and extrapolate from Plaintiffs' bone lead levels.

As VNA acknowledges, Dr. Bithoney was able to review the results from Dr. Aaron Specht's bone lead testing and conclude Plaintiffs experienced "significant and definitive exposure to toxic levels of [lead]." Ex. 6, Bithoney Report [REDACTED], at 4; Ex. 3, Bithoney Report [REDACTED], at 3; Ex. 4, Bithoney Report [REDACTED] at 5; Ex. 5, Bithoney Report [REDACTED] at 4. VNA complains, however, that bone lead testing is unreliable and therefore Dr. Bithoney should not be able to rely upon it. Essentially, VNA incorporates by reference its motion to exclude the reports and testimony of Dr. Specht. *See* VNA Br. at 32–34. VNA's contention is no basis to exclude Dr. Bithoney's testimony for several reasons.

First, there is no basis to exclude Dr. Specht's report and testimony, and the Court should reject VNA's motion for that reason alone. As Plaintiffs' point out there, Dr. Specht's pXRF is inherently testable, has been subjected to peer review publication numerous times, has a built-in uncertainty measurement (which has continually been refined, so that uncertainty is now very low), and it is generally accepted in the relevant scientific community. *See Gissantaner*, 990 F.3d at 464–66. Furthermore, Dr. Specht's opinions "flow naturally from his own current [and] prior

research,” which is an independent indicium of reliability. *See Johnson*, 484 F.3d at 435.

Second, VNA’s complaints about “typical or baseline levels of bone lead in children” are likewise lifted from its motion to exclude Dr. Specht’s testimony and again miss the mark. There, VNA complained that Dr. Specht had no basis for comparison, which was false. His own studies regarding bone lead in children provide a basis for comparison (and indeed some of them involve children exposed to pure lead as medicine). *See* Ex. 8, Specht Report, at 7; Ex. 7, Specht Dep., at 283:22–284:5. Moreover, the Plaintiffs’ bone lead results were in line with general “bone lead results from Flint” that “were 6.8 times higher on average than children in Ontario.” Ex. 8, Specht Report, at 7. VNA’s claim that this is an “apples-to-oranges comparison” is simply wrong. KXRF may have been used in the Ontario study, but Dr. Specht’s research showed that pXRF and KXRF generate similar results, particularly after his post-2016 refinements. *See* Ex. 7, Specht Dep., at 247:10–21, 258:9–259:4, 298:5–22, 300:6–18, 370:15–20, 408:14–17.

He was also able to identify comparison studies involving “populations where there was leaded gasoline exposure.” *See id.* at 433:13–21. “In previous studies of leaded gasoline exposure, the age relations were such that leaded gasoline alone would account for measures of bone lead that were greater than 10 but not greater than 20.” *Id.* at 434:15–19. Plaintiffs note that VNA relies heavily on Dr. Bithoney’s

purported “withdrawal” of his reliance on this comparison “[i]f Dr. Specht has withdrawn that [reference].” *See* VNA Br. at 33. But a fair reading of Dr. Specht’s deposition shows he didn’t withdraw the reference at all; rather, he claimed that the “adult exposures” in the literature there “wouldn’t be relevant” to children, since those exposures were leaded gasoline. *See* Ex. 7, Specht Dep., at 432:9–12. So VNA may have temporarily confused Dr. Bithoney, but that doesn’t defeat the salience of that comparison here: Plaintiffs, all of whom are children born decades after leaded gasoline was outlawed, have bone lead levels comparable to adults who were chronically exposed to leaded gasoline.

Third, VNA complains that bone lead measurements “cannot show either the source or the timing of Plaintiffs’ alleged lead exposures.” VNA Br. at 35–37. VNA’s quibbling with Dr. Bithoney’s estimation of the half-life of lead in children’s bones is no basis for exclusion. It is a valid extrapolation from existing data; but even if it is an assumption, it is a reasonable one. *See In re Scrap Metal Antitrust Litig.*, 527 F.3d at 527, 532 (affirming district court denial of *Daubert* motion where expert provided “reasoned explanation for the assumptions”); *In re Whirlpool Corp. Front-Loading Washer Prods. Liab. Litig.*, 45 F. Supp. 3d 724, 757 (N.D. Ohio 2014) (“Given Rule 702’s liberal policy of admissibility, Bresnahan provides sufficient grounds for the majority of his assumptions.”). VNA’s reliance on the apparent disagreement of its expert, Brent Finley, is likewise not sufficient for

exclusion. *See Phillips v. Cohen*, 400 F.3d 388, 399 (6th Cir. 2005) (“Competing expert opinions present the classic “battle of the experts and it is up to a jury to evaluate what weight and credibility each expert opinion deserves.”).

VNA’s latter conjecture that it is “just as likely” that any exposures could be from other sources “in the four years after the crisis” (*see* VNA Br. at 37) ignores the fact that Dr. Bithoney considered other sources and concluded that there were none. *See supra* at 14–16. Whether Dr. Bithoney can consider and draw inferences from Plaintiffs’ bone lead levels, *see Jahn*, 233 F.3d at 391, is entirely separate from whether he reliably excluded other faintly potential sources (he did, more on that later).⁴ Therefore, Dr. Bithoney may permissibly rely on Plaintiffs’ bone lead levels.


B. Dr. Bithoney’s opinion (in accordance with clear CDC guidance) that there is “no safe” level of lead exposure is admissible.

1. Dr. Bithoney may testify to the fact that there is no known safe level of lead exposure.

VNA argues that Dr. Bithoney’s opinions rely exclusively on the notion that there is “no safe level” of lead exposure to justify his conclusions. What VNA is attempting to do is recast Dr. Bithoney’s testimony as the kind unsound “any exposure” testimony that is sometimes excluded by courts. *See* VNA Br. at 42–43 (citing cases). But VNA overlooks the totality of Dr. Bithoney’s testimony. While

⁴ This argument, moreover, unduly relies on VNA’s simple factual disagreement with Dr. Bithoney’s differential diagnosis, which is certainly no basis for exclusion. *See id.* at 391–92; *Pipitone*, 288 F.3d at 250.

he acknowledges that there is no safe level of lead exposure (a scientific fact backed by the research and findings of government agencies), Dr. Bithoney only relies on it as a starting point; he goes on to base his full opinion upon numerous additional data points. Thus, the cases VNA cites do not actually bear on Dr. Bithoney's testimony at all because he is not offering excludable "any exposure" testimony.

For sure, it is accurate to say that there is no safe level of lead exposure. Indeed, highly respected institutions including the National Institute of Health (NIH) and the Centers for Disease Control and Prevention (CDC) agree that there is no "safe" level of lead exposure. *See* Ex. 3, Dr. Bithoney Report , at 9. Moreover, the concept that there is no safe level of lead exposure is generally accepted in the relevant scientific community. *See A Cmty. Voice v. EPA*, 997 F.3d 983, 993 (9th Cir. 2021) ("[T]here is no safe level of lead exposure. The CDC has been telling us this for years."); *United States v. N.Y. City Hous. Auth.*, 347 F. Supp. 3d 182, 190 n.3 (S.D.N.Y. 2018) ("A recent policy statement published by the American Academy of Pediatrics' Council on Environmental Health confirms that there is no safe level of lead in blood"). Notably, VNA does not claim otherwise.⁵ Dr. Bithoney is certainly not incorrect when he states that there is no safe lead level.

⁵ To be sure, VNA's expert, Dr. Finley, does not opine that there *is* a safe level of lead. He and Dr. Bithoney do not appear to be in disagreement on the fact that there is no safe lead level. But VNA's larger point—that a safe level of lead may someday be established, *see* VNA Br. at 44—is preposterous. As the New York

For this reason, Dr. Bithoney should not be barred from presenting this fact to the jury. Even if he were rendering no other opinion (or, indeed, no opinion at all), he could testify to this information, and it would be helpful to the jury. *See Jesa Enters. v. Thermoflex Corp.*, 268 F. Supp. 3d 968, 973–74 (E.D. Mich. 2017). As the Court noted there, “[t]he 2000 Amendments to Rule 702 did ‘not alter the venerable practice of using expert testimony to educate the factfinder on general principles.’” *Id.* at 973 (quoting Fed. R. Evid. 702 Advisory Committee Notes to 2000 amends.). “Rule 702 allows an expert to ‘testify in the form of an opinion *or otherwise*,’ which means that the expert may share his or her special knowledge with the jury in areas that might extend beyond the information known to the average juror.” *Id.* at 973–74 (citations omitted) (emphasis in *Jesa Enterprises*).

But perhaps VNA thinks that Plaintiffs’ experts stopped there—and considered nothing else—and so believes that their testimony is perhaps vulnerable under *Daubert* and its progeny. Truly, some courts (including the decisions VNA relies upon) have excluded causation opinions when an expert offers no basis for their causation opinion other than that there is no known safe level of the toxin and that there is some “proof of exposure.” *See, e.g., Nelson*, 243 F.3d at 251. Yet, Dr.

Appellate Division said of a similar argument the plaintiff there should find or conduct a controlled dose study to establish a baseline level of asbestos exposure necessary to cause mesothelioma: “Clearly no controlled dose response studies concerning unsafe levels of asbestos exposure can be ethically conducted in humans.” *Nemeth v. Brenntag N. Am.*, 183 A.D.3d 211, 228 n.6 (1st Dep’t 2020).

Bithoney does not exclusively rely on this fact when he draws his conclusions about the impact of lead on children and on the Plaintiffs; he merely uses it as a starting point. As Plaintiffs explain at length in their opposition to VNA's summary judgment motion and in other *Daubert* motions, Plaintiffs' other experts considered numerous other data points. When Dr. Bithoney's testimony is taken as a whole and in context with the testimony of Plaintiffs' other experts, it is abundantly clear that Plaintiffs present much more than just "no safe level" or "any exposure" testimony.

Consistent with this abundance of Plaintiffs' expert testimony, courts grappling with the nuances of experts' testimony in unique cases have recognized that it is acceptable to acknowledge that there is "no safe level" of exposure if it is scientifically accurate to do so. Thus, even when courts have recognized that phrases like "every exposure counts" are not themselves *sufficient* to prove causation (and may under certain circumstances result in exclusion of the expert's opinion), "this does not preclude such an observation as a starting point in thinking about what would or should be sufficient, nor to illustrate the potential of any exposure creating a risk of contracting mesothelioma, albeit not a substantial one." *Carroll*, 2017 U.S. Dist. LEXIS 105556, at *33.

Dr. Bithoney does not, as VNA suggests, simply show "proof of exposure" to lead; he uses a reliable methodology to show that plaintiffs have been "significant[ly]" and "definitive[ly]" exposed to lead. *See* Ex. 3, Dr. Bithoney Report

██████, at 3. Essentially, it does not matter if there is a threshold level for lead exposure or what that level is because all four plaintiffs easily exceed that theoretical level of exposure as a result of their substantial exposure to lead.

VNA relies heavily on *Pluck*, a case where a plaintiff sought to attribute her cancer to long-term low-level exposure to benzene contained in well water contaminated by the defendant. *See Pluck*, 640 F.3d at 676–77. The benzene in her well had been monitored and never exceeded EPA limits. *Id.* The court observed that benzene is “a known carcinogen in sufficient doses” and that benzene is “ubiquitous in the ambient air and is a component or constituent of vehicle exhaust and cigarette smoke,” and found that the plaintiff’s expert had not “ruled in” these other sources. *Id.* The plaintiff had been exposed to benzene from multiple sources over many years, including her own long-term smoking habit. *Id.* The court found that the plaintiff failed to produce admissible evidence that her low-level exposure to the benzene in her well caused her medical condition, and thus, summary judgment was granted in the defendant’s favor. *Id.*

The instant case is meaningfully distinguishable from *Pluck* in a number of ways. First, the lead present in Flint’s water did exceed the EPA’s action level for lead in water under the LCR. Further, Dr. Bithoney considered other potential exposures and ruled them out. *See supra* at 14–16; *infra* at 45–50. A final important difference from *Pluck* is that Plaintiffs *have* produced evidence of their dose of

exposure to the lead in Flint’s tap water that caused their injuries. *See supra* at 8–14, 21–33. Because Dr. Bithoney points to ample evidence of exposure to lead from Flint’s tap water while ruling out other potential sources of exposure, Dr. Bithoney does not need to specify the “precise level” of lead to which the plaintiffs were exposed.⁶

VNA also relies heavily on *Nelson* for its argument that Dr. Bithoney’s testimony is unreliable because he merely “assumes that [the amount of lead the plaintiffs were exposed to] was sufficient to make them ill.” VNA Br. at 42. Yet, this case bears no resemblance to *Nelson*. In *Nelson*, plaintiffs’ expert asserted that because the toxin in question was present in the environment where plaintiffs lived that they must have been exposed to a level that could cause impairments. *Nelson*, 243 F.3d at 253. The *Nelson* plaintiffs could not demonstrate “any factual basis from which a jury could infer that the plaintiffs were in fact exposed to [the toxin] from [the one specific source they identified].” *Id.* at 253–54. The *Nelson* court reasoned that this “defect goes hand-in-hand with the failure to evaluate or show a temporal

⁶ Furthermore, the Sixth Circuit has repeatedly held that “evidence of the precise level of chemical exposure is not necessary when other evidence supports the claim.” *See, e.g., Sunnycal v. Csx Transp., Inc.*, 926 F. Supp. 2d 988, 993–94 (S.D. Ohio 2013); *accord Best v. Lowe’s Home Ctrs., Inc.*, 563 F.3d 171, 178 (6th Cir. 2009); *Hardyman v. Norfolk & W. Ry. Co.*, 243 F.3d 255, 260 (6th Cir. 2000); *Gass v. Marriott Hotel Servs.*, 558 F.3d 419, 434 (6th Cir. 2009).

relationship between exposure and symptoms” because some of the plaintiffs experienced the complained-of defects prior to their alleged exposure. *Id.*

Nelson is easily distinguished from the instant case. Here, Dr. Bithoney does much more than merely conclude that because there was lead in Flint’s water that the plaintiffs were poisoned by it in sufficient quantity. Dr. Bithoney carefully considers and rules out other causes (including other sources of lead) concludes that Plaintiffs’ injuries were caused by their ingestion of lead-contaminated tap water. *See supra* at 8–16. Additionally, he relies upon Dr. Krishnan’s observation that Plaintiffs did not exhibit [REDACTED] prior to the Flint Water Crisis. Plaintiffs, through Dr. Bithoney’s testimony, show a “temporal relationship between exposure and symptoms” in a way the *Nelson* plaintiffs could not.

VNA accuses Dr. Bithoney of making an impermissible logical leap from stating that there is no safe level of lead to concluding “every exposure . . . must have been a substantial contributing cause” of plaintiffs’ injuries. VNA Br. at 44 (citing *Comardelle*, 76 F. Supp. 3d at 634). However, Dr. Bithoney *actually* does the opposite. Not only does Dr. Bithoney estimate a dosage that the Plaintiffs would have been exposed to, he determined that Flint’s contaminated water was the only “substantial contributing cause” of Plaintiffs’ injuries by ruling out numerous other potential causes. Dr. Bithoney employed the “well accepted method of differential diagnosis,” a “standard scientific technique” which identifies “the cause of a medical

problem by eliminating the likely causes until the most probable one is isolated.”
See Pluck, 630 F.3d at 671. “There is nothing controversial about that methodology.” *Myers v. Illinois Cent. R. Co.*, 629 F.3d 639, 644 (7th Cir. 2010).⁷

2. Dr. Bithoney may consider regulatory guidance and explain his consideration of it to the jury.

Next, VNA’s criticism of Dr. Bithoney’s consideration of regulatory guidelines is misplaced. VNA argues that because regulatory guidelines tend to be more conservative and overstate risk such that the guidelines are overprotective of human health, that such guidelines are not reliable in a litigation context for proving causation. Thus, where an expert relies *solely* on exceedance of a regulatory threshold for causation, the expert’s opinion is properly excluded. *See Sutera v. Perrier Group of Am.*, 986 F. Supp. 655, 665 (D. Mass. 1997); *Allen v. Pennsylvania Eng’g Corp.*, 102 F.3d 194, 198(5th Cir. 1996).

Plaintiffs note that the cases VNA cites deal with things like “permissible level[s]” of a toxin in an environment, *Sutera*, 986 F. Supp. at 664, and “prophylactic rules governing human exposure,” *Allen*, 102 F.3d at 198, that regulatory agencies craft to prevent excessive exposures. But the CDC guidance that Dr. Bithoney considers is different: It doesn’t govern how much lead can be in an environment; rather, it is simply a scientific observation by the CDC. The CDC’s conclusion that

⁷ VNA’s separate complaint that Dr. Bithoney did not correctly complete a differential diagnosis is incorrect. *See infra* at 45–50.

there is no safe level of lead exposure for children is not the same kind of prophylactic level that governs conduct to prevent exposures; rather, it is the same kind of statement that scientists and public health organizations make. Consequently, Dr. Bithoney should not be precluded from telling the jury such a fact, particularly since it is the kind of guidance that experts in the field rely upon.

Nevertheless, exceedance of regulatory standards coupled with additional evidence can be relied upon in forming causation opinions. *See C.W. v. Textron, Inc.*, Case No. 3:10 CV 87, 2014 U.S. Dist. LEXIS 34938, *13–14 (N.D. Ind. Mar. 17, 2014); *In re W.R. Grace & Co.*, 355 B.R. 462, 476 (D. Del. Bankr. Ct. 2006) (violation of a regulatory standard plus “epidemiological studies, risk assessment, and/or other reliable methodologies” can be used to demonstrate causation); *cf. Sutura*, 986 F. Supp. at 665 (“[V]iolation of a safety regulation does not, *without more*, suffice for reliable scientific evidence of causation.” (emphasis added)).⁸

After all, a regulatory threshold is hardly *irrelevant* to causation; the United States Supreme Court noted in a slightly different context that regulatory guidelines, at a minimum, “suggest[] . . . causation.” *See Matrixx Initiatives, Inc. v. Siracusano*, 563 U.S. 27, 42 (2011) (cited in VNA MSJ Br. at 76). Indeed, it is not uncommon

⁸ By analogy, regulatory guidelines can be useful in determining the appropriate standard of care, which informs an analysis of breach and causation, and so Dr. Bithoney should not be barred from testifying. *See, e.g., Keir v. United States*, 853 F.2d 398, 413–14 (6th Cir. 1988).

for courts to consider regulatory standards when examining causation. *See Poulis-Minott v. Smith*, 388 F.3d 354, 364 (1st Cir. 2004); *Pan Am Grain Mfg. Co. v. P.R. Ports Auth.*, 295 F.3d 108, 115 (1st Cir. 2002); *Bosland v. Warnock Dodge, Inc.*, 197 N.J. 543, 560 (2009); *see also Matrixx Initiatives, Inc.*, 563 U.S. at 42.

But again, VNA fails to appreciate that in addition to regulatory guidelines, Dr. Bithoney relied upon numerous other data points including Plaintiffs’ medical and academic records, interviews and depositions with Plaintiffs’ parents, Dr. Krishnan’s reports, extensive medical and scientific research, and his own professional experience. Furthermore, if the regulatory guidelines indicate that there is no safe lead level and regulatory guidelines tend to “overstate the actual” risk, a reasonable inference is that even low levels of lead are dangerously toxic.

In sum, Dr. Bithoney is not relying solely upon regulatory standards and therefore there is no basis to exclude his testimony at all, particularly in light of the fact that VNA’s conduct allowed plaintiffs to be exposed to levels of lead that far exceed various regulatory standards.⁹

⁹ At most, this final point about the CDC’s guidance is an issue for a targeted motion *in limine*, *see, e.g., Cook v. Erie Ins. Co.*, Case No. 2:18-cv-00282, 2021 U.S. Dist. LEXIS 96652, at *9–10 (S.D. Ohio May 20, 2021), and is therefore premature at this stage.

3. Dr. Bithoney may rely on studies, which consistently find that even very low levels of lead exposure cause harmful effects.

In the same vein, VNA's objection to Dr. Bithoney's observation that studies show that children suffer adverse health effects due to lead even at "low levels" of exposure is meritless. *See, e.g.*, Ex. 3, Bithoney Report [REDACTED] at 10.

Initially, whether Dr. Bithoney "disavowed" reliance on Plaintiffs' *specific* lead levels beside the point. As Dr. Bithoney and Dr. Specht will testify, lead level data can be flawed due to its short half-life and so consideration of *Plaintiffs'* blood lead levels would not paint a complete and accurate picture of their exposure here, particularly given the unique facts of this case. But consideration of general research regarding lead levels does not suffer the same defect. Those studies (notwithstanding VNA's numerous interpretative errors of them) help establish the kind of baseline threshold for potential adverse effects that VNA demands throughout its briefing.

As above, VNA's disagreement with Dr. Bithoney regarding certain studies—in its words, he "is wrong" (VNA Br. at 49)—is no basis for exclusion. In truth, it is VNA that gets the studies it cites completely wrong. For instance, the quote VNA believes supports its position *actually confirms* that Dr. Bithoney is correct. *See* VNA Br. at 49 (quoting VNA Ex. 20, Schwartz at 42). The study "showed no evidence of a threshold down to blood concentrations of 1 µg/dL." VNA Ex. 20, Schwartz at 42. Likewise, VNA apparently interprets Chiodo's conclusions

backwards: VNA posits that Chiodo was only able to identify “a statistically significant relationship with respect to just 3 of 15 outcomes at levels below 5 $\mu\text{g/dL}$ ” (VNA Br. at 49 (citing VNA Ex. 23, Chiodo at 368); however, Chiodo *actually concludes* that there is a statistically significant relationship between *all but* three outcomes at 5 $\mu\text{g/dL}$ level. VNA Ex. 23, Chiodo at 369. To be sure, Chiodo notes that “the research presented here identified effects on attention at levels as low as 3 $\mu\text{g/dL}$.” Chiodo at 368.

Similarly, VNA suggests that the Lamphear study does not indicate that there is a statistically significant relationship between lead exposure and the four cognitive measures studied. However, VNA again misinterprets the study. The Lamphear study merely concludes that when the “borderline significance level,” the “smaller sample size,” and the “imprecision of the relationship of blood lead concentration with performance on the reading subtest” are considered, that there likely *is* a statistically significant effect of lead at the less than 2.5 $\mu\text{g/dL}$ level on reading scores (to say nothing of the other three cognitive measures). In short, the Lamphear study actually concludes that lead at the less than 2.5 $\mu\text{g/dL}$ level does have a statistically significant impact on reading scores. VNA Ex. 22, Lamphear at 526.

Nor does the fact that Chiodo study doesn’t find a statistically significant relationship between lead exposure and the impulsivity aspect of ADHD require exclusion. As above, an expert can rely on a study without wholesale adopting or

agreeing with its conclusions. *See e.g., In re Heparin Prods. Liab. Litig.*, 803 F. Supp. 2d at 732–33; *Knight*, 323 F. Supp. 3d at 849–50; *Mahaney*, 2011 U.S. Dist. LEXIS 156848, at *32. After all, “experts commonly extrapolate from existing data,” *GE v. Joiner*, 522 U.S. 136, 146 (1997).

Finally, VNA’s other complaint—that these are cross-sectional studies—is faulty for the same reason that many of its other arguments for exclusion of various aspects of Dr. Bithoney’s opinion. The cases VNA cites do not prohibit an expert from considering a given study altogether, and they certainly do not say that cross-sectional studies cannot provide a useful benchmark for considering the levels of exposure that would be harmful.


C. Dr. Bithoney considered and ruled out potential alternative sources of lead exposure.

As part of his investigation, Dr. Bithoney considered and ruled out alternative lead sources to which the four bellwether Plaintiffs could have reasonably been exposed, leaving Flint’s tap water as the most probable source. *See* Ex. 2, Bithoney Dep., at 220:13–221:10; 208:7–8; 221:6–10; 397:13–19. Of course, “[i]n order to be admissible on the issue of causation, an expert’s testimony need not eliminate all other possible causes of the injury.” *Jahn*, 233 F.3d at 390. “‘The fact that several possible causes might remain ‘uneliminated’ . . . only goes to the accuracy of the conclusion, not to the soundness of the methodology.’” *Id.* (quoting *Ambrosini v. Labarraque*, 101 F.3d 129, 140 (D.C. Cir. 1996)).

Dr. Bithoney specifically asked the Plaintiff's parents about "environmental conditions" such as "peeling paint" and "leaded dust" and was able to rule out those exposures as the cause the Plaintiff's elevated blood lead levels. *Id.* at 207:3–5; 212:13–18. In his thorough interviews with Plaintiff's parents, Dr. Bithoney was unable to find any evidence that Plaintiffs were exposed to lead through lead paint, lead dust, soil, or any cause other than the contaminated water. *Id.* at 236:1–7.

While VNA faults Dr. Bithoney for not "independently verify[ing]" those interviews or "independently investigat[ing] any alternative sources of lead," *see* VNA Br. at 24, it ignores that its own attempts to discover lead paint and lead in soil as a source of Plaintiffs' injuries turned up nothing. For one thing, VNA inspected three of the four Plaintiffs' homes and found no elevated lead in soil. *See* Ex. 9, Report of Home Inspection [REDACTED], at 6; Ex. 10, Report of Home Inspection [REDACTED] at 6; Ex. 11, Report of Home Inspection [REDACTED], at 6. Although there were some limited lead-based paint hazards, they were all described by VNA's inspector as only requiring "scheduled attention," and although VNA probed some of these issues at Plaintiffs' parents' depositions, there was no testimony that indicated the children were exposed to these hazards. *See* Ex. 13, Teed Dep., at 24:22–24, 35:5–7; Ex. 16, Martin Dep., at 26:13–22, 47:24–48:9; Ex. 15, Vanderhagen Dep., at 44:8–12, 50:8–12; Ex. 14, Wheeler Dep., at 58:7–9. In other words, VNA's own thorough investigations throughout discovery independently corroborate Dr. Bithoney's

conclusion that there was no evidence that lead paint or lead in soil was a potential alternative cause of Plaintiffs' injuries.

VNA asserts that Dr Bithoney's testimony should be barred because, according to its expert, "all four Plaintiffs had copper service lines, not lead," VNA Br. at 22 (citing VNA Ex. 4, Finley Report  at 37), but this is a red herring. Dr. Bithoney's opinion that the Plaintiffs' consumed water contaminated with lead does not depend on Plaintiffs' homes having lead service lines. Nowhere does Dr. Bithoney assume the ultimate source of the lead to be the service lines that fed directly into Plaintiffs' homes. Of course, the lead that found its way into Plaintiffs' water could well have originated from lines located further up within the water distribution system, or from other pipes or fixtures with lead components in Plaintiffs' homes. Indeed, the Centers for Disease Control and Prevention (CDC) cautions that "[h]omes without lead service lines may still have brass or chrome-plated brass faucets, galvanized iron pipes or other plumbing soldered with lead."¹⁰ Furthermore, the Environmental Protection Agency (EPA) advises that "[t]he most common sources of lead in drinking water are lead pipes, and brass or bronze faucets and fixtures."¹¹

¹⁰ *Lead in Drinking Water*, CDC, <https://www.cdc.gov/nceh/lead/prevention/sources/water.htm>.

¹¹ *Lead Service Line Replacement*, EPA, <https://www.epa.gov/ground-water-and-drinking-water/lead-service-line-replacement>.

In sum, Dr. Bithoney's opinion that Plaintiffs were exposed to lead by way of their drinking water is well-supported by multiple different types of evidence in the record. Dr. Bithoney's opinion is further strengthened by the consideration he gave to potential alternative sources of exposure, which were ultimately ruled out. Unfortunately, we do not have water samples from the bellwether Plaintiffs' homes from the relevant period, which might be tested and provide definitive confirmation that the Plaintiffs were exposed to lead by way of their drinking water. However, this is by no means the end of the inquiry.


As the Sixth Circuit held in *Jahn*, where evidence is lacking, experts may nevertheless draw reasonable inferences from the facts in forming opinions. 233 F.3d at 390. Dr. Bithoney may certainly testify regarding what he "believes to be probable" as it will assist the jury in determining the specific cause of Plaintiffs' injuries. *Id.* There is ample evidence in this case from which Dr. Bithoney may permissibly infer that the Plaintiffs were exposed to lead through drinking water.

VNA contends that Dr. Bithoney must identify every conceivable alternative cause of Plaintiffs' lead exposure or injuries to its satisfaction. VNA Br. at 51. However, while an expert must "consider[]" alternative causes, *see Best*, 563 F.3d at 178, whether the potential alternatives are listed in the expert's report is not dispositive. After all, an "expert's testimony" need not be limited "to reading his report"; rather, the Rules "contemplate[]" that the expert will supplement, elaborate

upon, explain and subject himself to cross-examination upon his report.” *Thompson v. Doane Pet Care Co.*, 470 F.3d 1201, 1203 (6th Cir. 2006). Although VNA believes he did not do so with sufficient specificity, this claim rings hollow as the only reason it lacks further details is its own failure to ask follow-up questions at Dr. Bithoney’s deposition.

VNA’s claim that Dr. Bithoney may not rely on Dr. Krishna’s diagnosis, merely because she is not being offered as a specific causation expert, is misplaced. First, he can consider it because it is common for a physician to rely on statements and diagnoses of other doctors. *See* Fed. R. Evid. 703. “[A] physician in his own practice bases his diagnosis on . . . statements [and] reports and opinions from nurses, technicians and other doctors” *Id.*, note of Advisory Committee on Rules. Second, Dr. Krishnan’s statement—that each diagnosis is “consonant with lead intoxication”—need not be a causal statement. She is, as VNA acknowledges, not Plaintiffs’ causation expert. Therefore, *Conde v. Velsicol Chem. Corp.*, 24 F.3d 809, 814 (6th Cir. 1994) and *Turpin v. Merrell Dow Pharms., Inc.*, 959 F.2d 1349, 1360 (6th Cir. 1992) (upon which *Conde* is based) is inapposite. In *Turpin*, the *causation expert*, not a diagnostic doctor, “stop[ped] short of testifying that Bendectin more than not caused the birth defects in babies,” instead saying that the diagnosis was merely “consistent with” Bendectin exposure. Here, Dr. Bithoney—the *causation*

expert—goes much further than merely saying Plaintiffs’ diagnoses are consistent with lead exposure.

Finally, VNA attempts to draw an analogy between the present case and *Tamraz v. Lincoln Elec. Co.*, in which plaintiff’s expert opined that exposure to manganese caused plaintiff to develop Parkinson’s Disease. *See* 620 F.3d 665 (6th Cir. 2010). However, the facts of *Tamraz* are so weak that any attempt to conflate it with the present case is to substitute bellwether Plaintiffs’ case with a strawman. There, plaintiff’s expert “acknowledged” that he made *several* “speculative jumps” in his chain of causation. *Id.* at 670. In fact, “he described the literature hypothesizing a link between environmental toxins and latent genetic Parkinson’s Disease as ‘all theoretical.’” *Id.* He further conceded that he “knew of no studies finding a link between manganese and Parkinson’s Disease.” *Id.* By strong contrast, Dr. Bithoney relied upon nationally recognized studies performed by the CDC and the NIH, in which lead is linked to a variety of negative health effects in minors including “decreased academic achievement,” “IQ decreases,” specific cognitive measure declines,” and “increased incidence of problems of attention related behavior.” Ex. 3, Bithoney Report  at 10–11. Clearly, the expert’s “speculative jumps” in *Tamraz* are a far cry from the well-known connection between lead poisoning and neurocognitive deficits in minors, as determined, not just by Dr. Bithoney, but by the Nation’s “most credible scientific bodies.” *Id.* at 10.

III. Dr. Bithoney's opinions regarding Plaintiffs' future harm are reliable.

Separately, VNA challenges the reliability of Dr. Bithoney's opinion that each child will likely struggle academically and professionally in the future. *See* VNA Br. at 55–57. While VNA concedes Dr. Bithoney has a basis for his opinions regarding the impact that Plaintiffs' diagnoses will have on them going forward—his decades of professional experience as well as published literature, *see, e.g.*, Ex. 3, Bithoney Report [REDACTED], at 13; Ex. 2, Bithoney Dep. at 439:18–440:11—for VNA, it is still not enough. First, VNA accuses Dr. Bithoney of relying upon studies that do not support his conclusions related to the “lag effect.” Second, VNA attacks the amount of sources Dr. Bithoney relies upon in forming conclusions about the future health of the Plaintiffs. At most, these arguments are fodder for cross-examination; certainly, neither is a basis for exclusion.

To the first point, experts are permitted to apply their own experience and research when forming conclusions. *United States v. Sullivan*, 246 F. Supp. 2d 696, 698 (E.D. Ky. 2003); *see also Jahn*, 233 F.3d at 390–92 (expert opinions based on data and experience are not “guesses pulled from thin air,” but are instead valid expert testimony). Attempting to substitute its judgment for that of an expert, VNA argues that the lag effect is seen in “certain types of brain injuries” but not in the type of brain injuries from which the Plaintiffs suffer. VNA Br. at 56. VNA asserts that Dr. Bithoney's application of the lag effect in the instant case represents “too

great an analytical gap between the data and the opinions proffered.” *Id.* (citing *Joiner*, 522 U.S. at 146). Yet, VNA does not say why there is any gap in reasoning here; it just copies the oft-quoted line without any attempt to substantiate its claim of an analytical gap.¹² Of course, it hardly seems “too great an analytical gap” to opine that Plaintiffs with one type of brain injury will suffer the same type of lag effect seen in victims of other (and quite diverse) types of brain injuries, particularly when Dr. Bithoney has in fact observed the lag effect throughout his decades of experience in the relevant scientific field.

Second, in arguing that Dr. Bithoney’s conclusions about Plaintiffs increased risk of suffering from various medical conditions are not supported by the literature he cites, VNA concedes that his conclusions are based on *some* facts, just not enough. VNA states that Dr. Bithoney relies on a resource prepared by the NIH however they offer no legal support for their point that an expert must rely upon a specific number of studies for the opinion to be valid. VNA Br. at 56. “The test of admissibility is not whether a particular scientific opinion has the best foundation,

¹² Certainly, the expert’s opinion in *Joiner* bears no resemblance to Dr. Bithoney’s. There, an expert exclusive relied on animal studies wherein animals were exposed to “massive doses of highly concentrated” toxins injected directly into their stomachs and thus contracted cancer to conclude that a man exposed to exponentially smaller doses of the same toxin caused his cancer. *Joiner*, 522 U.S. at 144. Dr. Bithoney’s application of the lag effect, which is seen in victims of brain injuries, to the Plaintiffs who do, in fact, suffer from brain injuries, is not the type of impermissible extrapolation in *Joiner*.

or even whether the opinion is supported by the best methodology or unassailable research. Rather, the test is whether the ‘particular opinion is based on *valid* reasoning and *reliable* methodology.’” *See In re TMI Litig.*, 193 F.3d 613, 665 (3d Cir. 1999) (quoting *Kannankeril*, 128 F.3d at 806).

VNA tries to bolster its contention by pointing to their own expert, Dr. Weed. But the *Daubert* analysis is not about which expert is right and which is wrong. *See Micro Chem*, 317 F.3d at 1392; *cf. Guinn v. Praxair*, 386 F. Supp. 3d 850, 883 (E.D. Mich. 2019) (“Though Praxair’s expert Eby disagrees with most of the assertions by Plaintiff and his experts, a motion for summary judgment is not the time to referee a ‘battle of the experts.’” (quoting *Kalamazoo River Study Group v. Rockwell Intern. Corp.*, 171 F.3d 1065, 1072 (6th Cir. 1999))). Experts can reach different conclusions, yet both be permitted to offer expert testimony under the Rules. When two experts have a difference of opinions, the jury to weighs credibility of both and resolve the dispute. *See Phillips*, 400 F.3d at 399; *see also Pipitone*, 288 F.3d at 250.

Accordingly, this Court should not exclude Dr. Bithoney’s opinions about the future harms from which Plaintiffs may suffer.

IV. Dr. Bithoney’s opinions “fit” Plaintiffs’ theory of liability as to VNA.

Finally, contrary to VNA’s protestations, Dr. Bithoney’s opinions “fit Plaintiffs’ theory of liability with respect to VNA.” *See VNA Br.* at 57. For expert testimony to “fit,” “there must be a connection between the [expert opinion] being

offered and the disputed factual issues in the case in which the expert will testify.” *See Pride v. BIC Corp.*, 218 F.3d 566, 578 (6th Cir. 2000); *In re Northwest Airlines Corp. Antitrust Litig.*, 197 F. Supp.2d 908, 914 (E.D. Mich. 2002). When expert testimony “involves a reliable method that would aid the jury in resolving a factual dispute” it is said to “fit.” *Nationwide Mut. Fire Ins. Co. v. Black & Decker (U.S.)*, Inc., Case No. 13-cv-14312, 2015 U.S. Dist. LEXIS 90188, at *21 (E.D. Mich. July 13, 2015) (quoting *Bitler v. A.O. Smith Corp.*, 400 F.3d 1227, 1228 (10th Cir. 2004)). Here, there is no doubt that his opinions fit the facts of the case. Indeed, his opinions go to the very core of the issue of Plaintiffs’ injuries.

Initially, VNA is flatly wrong when it asserts that Dr. Bithoney’s opinions do not fit Plaintiffs’ “theory of liability with respect to VNA.” As it has elsewhere, VNA again contends that because VNA did not formally enter an agreement until 2015 that it cannot be liable for anything that took place prior. Of course, Plaintiffs’ standard of care expert Richard Humann explains that VNA had a duty to insert itself in the Flint Water Crisis in 2014 and offer its expertise to Flint. *See* Ex. 12, Humann Report, at 16.¹³ It did not do so and therefore breached its duty in 2014 and is

¹³ Humann relied upon documents showing that VNA had a relationship with the DWSD in 2014, and in fact completed a detailed report for the DWSD in which it held itself out as possessing a high degree of expertise in public water engineering. Ex. 12, Humann Report, at 16. When news of Flint’s water began to percolate in the summer and fall of 2014, VNA—as a top-tier expert with global prestige in public engineering—would have understood that one potential cause of

appropriately liable for Plaintiffs’ exposure at that time. Oddly, although virtually VNA’s entire argument on this point turns on VNA’s motion to exclude Humann’s testimony, VNA *never* mentions Humann. For sure, there is no basis to exclude Humann’s testimony, and for this reason alone, VNA’s challenge to the “fit” of Dr. Bithoney’s opinions should be denied. Even setting Mr. Humann aside, however, VNA’s argument here should still be rejected.

VNA next contends that Dr. Bithoney does not provide evidence that Plaintiffs drank any lead contaminated water after VNA was engaged. VNA Br. at 58. First, each Plaintiff consumed water throughout 2015, and primary evidence for this comes from Plaintiffs’ parents’ depositions.¹⁴ *See* Ex. 13, Teed Dep., at 103:16–104:3, 110:13–18, 110:20–21, 111:2–10; Ex. 14, Wheeler Dep., at 158:1–9, 161:13–163:10, 164:10–12, 165:13–17; Ex. 15, Vanderhagen Dep., at 86:3–21.¹⁵

the consternation about Flint’s water was the corrosivity of the water if Flint was not treating it. *See id.* at 16, 20. Thus, VNA could—and should—have “offer[ed] solutions to mitigate” the Flint Water Crisis. *See id.* at 20. It is doubtful that VNA did not follow news of a significant impending change to DWSD’s water distribution network. *See id.* at 20 (“It would be unimaginable for a water supply consultant diving into every and all aspects of a water supply system to remain unaware of such a significant and substantial system change happening within the DWSD.”).

¹⁴ In point of fact, contrary to what VNA says here, VNA does not even challenge that A.T. drank water throughout 2015 in its summary judgment motion.

¹⁵ Plaintiffs note that VNA apparently selected only testimony from R.V.’s mother that it believes supports its position. However, it has a duty of candor to the Court, and its persistent omission of testimony clarifying that the testimony VNA relies upon was incorrect, that she was confused, and that R.V. actually drank water into 2016, is deeply troubling. *See* Ex. 15, Vanderhagen Dep., at 84:22–85:22.

Additionally, although [REDACTED]'s mother testified that she instructed [REDACTED] not to drink the water, she lacked personal knowledge of all the locations at which [REDACTED] might have drank water (nor was she asked about it). *See* Ex. 16, Martin Dep., at 69:21–70:3; 109:9–12.¹⁶ Importantly, Dr. Bithoney testified that in addition to spending time in their homes and having the opportunity to drink the contaminated water, the Plaintiffs also spent time at “school,” “grandma’s house,” “aunt’s house” and other locations around Flint wherein they would have had the opportunity to consume the leaded water. Ex. 2, Bithoney Dep. at 99:2–8, 239:4–10, 239:21–241:4, 424:18–24. It is undeniable that children drink water at many points throughout the day regardless of where they are. He testified that because Plaintiffs were spending so much time all over Flint, drinking water wherever they went, they were more likely than not consuming contaminated water. *Id.* at 425:1–8.¹⁷

Nonetheless, the salient point is that R.V. consumed tap water after VNA was engaged by the City of Flint in February 2015.

¹⁶ Nor does Ms. Martin have any personal knowledge as to whether her daughter, who was often unable to focus and required frequent redirection, consistently heeded her instructions. *Id.* at 110:3–6. Additionally, she did not specifically describe her instructions to [REDACTED]. There was no question (and thus no testimony) that [REDACTED], a young child, would understand whether certain foods and beverages that she consumed outside her home contained contaminated water. As Dr. Bithoney pointed out, the Plaintiffs each “mixed their water” for certain food and drink items, such that “the kids drank water not only as plain water but as Kool-Aid or mixed with Jello or in soups or in cooking, tea, whatever. And for infants they mixed Enfamil . . . with tap water.” Ex. 2, Bithoney Dep., at 24:12–20.

¹⁷ Dr. Bithoney is not the only witness that testified that Plaintiffs continued to drink Flint tap water even after they were told to stop in 2014. Dr.

Even the Plaintiffs' parents acknowledged that the children were likely drinking the water even after being instructed to stop. Both Ms. Teed and Ms. Wheeler offer illuminating testimony in this regard. Ms. Teed's testimony shows that children can and do disregard their parents' instructions and admonitions. *See* Ex. 13, Teed Dep., at 101:21–24, 102:2–18, 102:21–23, 103:6–15. They do so in part “[b]ecause they’re kids.” *See id.* at 102:2–10. “They drink from wherever, whenever. That’s what kids do.” *Id.* at 102:21–23. Likewise, Ms. Wheeler’s testimony shows that a decision made within one home might not carry in another person’s home—even when that person is a family member. *See* Ex. 14, Wheeler Dep., at 158:1–9, 161:13–163:10. Indeed, even Ms. Wheeler herself did not follow her own rule universally outside of her own home. *See id.* at 160:10–19.

Finally, VNA states that Dr. Bithoney did not provide information about where the lead in Plaintiffs’ bones came from. This is simply false. Dr. Bithoney clearly and unequivocally presents his conclusion that the lead present in the

Michael’s testified that the Plaintiffs’ parents “don’t know how much kids drank from garden hoses or how much they drank from the tap” and “or how often they were at a grandparent’s house, or how often they were at a friend’s house, or what was the -- how much water did the kid drink in school.” Ex. 17, Michaels Dep., at 157:12–23. In acknowledging that he does not know exactly how much contaminated water each of the children drank at school, at family members’ homes, and from other contaminated sources, Dr. Michaels testifies that the children had to have consumed some contaminated water from those sources. *Id.* at 189:1–10. He states that he “know[s] for sure” that the Plaintiffs had exposures to the contaminated water outside their homes. *Id.* at 70:22–71:4.

children's bones was from their ingestion of Flint tap water. *See* Ex. 3, Bithoney Report [REDACTED], at 13; Ex. 4, Bithoney Report [REDACTED] at 14; Ex. 5, Bithoney Report [REDACTED] at 13; Ex. 6, Bithoney Report [REDACTED] at 12–13. “Trained experts commonly extrapolate from existing data,” *Joiner*, 522 U.S. at 146, and the Sixth Circuit approves of an expert drawing an “infer[ence]” from “records of test results and . . . symptoms.” *Jahn*, 233 F.3d at 391. Here, the inference that a substantial exposure to lead from Flint's water (as inferred from Plaintiffs' significant bone lead levels) is a reasonable one. In other words, there is not “too great an analytical gap between the data and the opinion proffered.” *Joiner*, 522 U.S. at 146.

After all, as above, (and contrary to VNA's assertion), Dr. Bithoney repeatedly rejected other potential alternative lead exposures for the Plaintiffs' concluded again that the lead-contaminated water ingested by the Plaintiffs caused their injuries. Ex. 2, Bithoney Dep., at 204:6–12; 207:3–208:8; 220:13–221:10; 208:7–8; 221:6–10; 397:13–19. Dr. Bithoney specifically asked the Plaintiff's parents about “environmental conditions” such as “peeling paint” and “leaded dust” and was able to rule out those exposures as the cause the Plaintiff's elevated blood lead levels. *Id.* at 207:3–5; 212:13–18. In his thorough interviews with Plaintiff's parents, he was unable to find any evidence that any Plaintiff was exposed to lead through lead paint, dust, soil, or any cause other than Flint's water. *Id.* at 236:1–7.

In the final analysis, Dr. Bithoney's testimony should not be excluded because he concludes, based on ample evidence and reliable methods, that Plaintiffs were exposed to lead from the Flint tap water at times when VNA was legally responsible. Taken together with the testimony of Plaintiff's other experts and lay witnesses about the scope of VNA's liability, Dr. Bithoney's testimony "fits" the case.

CONCLUSION

Accordingly, VNA's motion should be denied in its entirety.

Dated: July 29, 2021

Respectfully submitted,

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CERTIFICATE OF SERVICE

I, Renner K. Walker, hereby certify that on July 29, 2021, the foregoing brief and attached exhibits were served on all counsel of record via the court's ECF system.

/s/ Renner K. Walker

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